

the selectively doped vibrating member comprising a body of single crystal semiconductor material;

the support comprising a top layer of single crystal semiconductor material that is contiguous with the body of single crystal semiconductor material; and

the support being contiguous with a portion of single crystal silicon that overlies a lower layer of silicon di-oxide.

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19. (original) The electromechanical resonating device according to claim 15 wherein:

the selectively doped vibrating member comprises a beam shaped member having a first end, and a second end, a first longitudinal side extending between the first end and the second end, and a second longitudinal side extending between the first end and the second end.

20. (original) The electromechanical resonating device according to claim 19 wherein:

the selectively doped vibrating member is capable of resonating in a vibrational mode that includes the first node and a second node; and

the resonating device further comprises a second support attached at the second node.

21. (original) The electromechanical resonating device according to claim 20 wherein:

the first doped conducting region extends from the first support to the second support.

22. (original) The electromechanical resonating device according to claim 20 wherein:
  - the first support is attached to the first longitudinal side;
  - the second support is attached to the second longitudinal side; and

the device further comprises:

  - a third support attached to the second longitudinal side at the first node; and
  - a fourth support attached to the first longitudinal side at the second node.
23. (original) The electromechanical resonating device according to claim 19 wherein:
  - the first node is located at approximately a center of the beam shaped member;
  - the first support is attached at approximately a center of the first longitudinal side of the beam shaped member; and
  - the first doped conducting region extends from the first support towards the first end of the beam shaped member; and

the resonating device further comprises:

  - a second support attached at approximately the center of the second longitudinal side of the beam shaped member; and
  - a second doped conducting region extending from the second support toward the second end of the beam shaped member; and
  - an insulating region between the first doped conducting region and the second doped conducting region.
24. (original) The electromechanical resonating device according to claim 23 wherein:
  - the selectively doped vibrating member is capable of resonating in a vibrational mode that includes the first node, a second node, and a third node; and

the resonating device further comprises:

  - a third support attached to the beam at the second node;
  - a fourth support attached to the beam at the third node.

25. (currently amended) The electromechanical resonating device according to claim 23 24

wherein:

- the first doped conducting region extends from the first support to the third support; and
- the second doped conducting region extends from the second support to the fourth support.

26. (currently amended) An electromechanical resonating system comprising:

a vibrating member that is capable of resonating in a vibrational mode that includes a first anti-node characterized by a first relative phase and a second anti-node characterized by a second relative phase that is opposite to the first phase; and

- a first electrode positioned in a vicinity of the first anti-node; and ✓
- a second electrode positioned in a vicinity of the second anti-node; and
- an electric circuit including:
  - a differential amplifier having:
  - a first differential input coupled to the first electrode; and
  - a second differential input coupled to the second electrode.

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30. (original) The electromechanical resonating system according to claim 26 wherein:

the first electrode comprises:

- a first selectively doped region of the vibrating member.

31. (original) The electromechanical resonating system according to claim 30 wherein:  
the second electrode comprises:  
a second selectively doped region of the vibrating member.
32. (original) The electromechanical resonating system according to claim 26 wherein:  
the vibrating member comprises:  
a beam capable of vibrating in a flexural mode having at least two anti-nodes, and one or more nodes.
33. (currently amended) The electromechanical resonating system according to claim 26 32 wherein:  
a longitudinal coordinate of a center of gravity of the beam corresponds to a position of one of the one or more nodes.
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35. (currently amended) The electromechanical resonating system according to claim 26 32 further comprising:  
one or more supports coupled to the beam at each of the one or more nodes.
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37. (currently amended) The electromechanical resonating system according to claim 36 wherein: An electromechanical resonating system comprising:  
a vibrating member that is capable of resonating in a vibrational mode that includes a first anti-node characterized by a first relative phase and a second anti-node characterized by a second relative phase that is opposite to the first phase;  
a first electrode positioned in a vicinity of the first anti-node;  
a second electrode positioned in a vicinity of the second anti-node; and

the vibrating member comprises a beam capable of vibrating in a flexural mode having an even number of anti-nodes including a first plurality of anti-nodes characterized by the first phase, and a second plurality of anti-nodes characterized by the second phase.

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39. (currently amended) The electromechanical resonating system according to claim 38 37 further comprising:

a second set of electrodes each positioned in the vicinity of one of a set of the second plurality of anti-nodes; and

a second input of the electric circuit coupled to the second set of electrodes.

40. (new) An electromechanical resonating device comprising:

a first support member;

a selectively doped vibrating member that is capable of resonating in a vibrational mode that has a first node and is attached to the first support at a position of the first node, the selectively doped vibrating member including;

a first doped conducting region extending from the first support; and  
an insulating region; and

wherein the first node is located at approximately a center of the beam shaped member;

the first support is attached at approximately a center of the first longitudinal side of the beam shaped member; and

the first doped conducting region extends from the first support towards the first end of the beam shaped member; and

the resonating device further comprises:

a second support attached at approximately the center of the second longitudinal side of the beam shaped member; and

a second doped conducting region extending from the second support toward the second end of the beam shaped member; and